

MULTIMEDIA



UNIVERSITY

STUDENT ID NO

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# MULTIMEDIA UNIVERSITY

## FINAL EXAMINATION

TRIMESTER 1, 2017 / 2018

### **PBC0016–BASIC COMPUTING AND PROGRAMMING** (Foundation in Engineering)

12 OCTOBER 2017  
9.00 a.m. - 11.00 a.m.  
(2 Hours)

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#### **INSTRUCTIONS TO STUDENT**

1. This question paper consists of **FOUR** printed pages with **FOUR** questions.
2. Answer **ALL** questions.
3. Write your answers in the Answer Booklet.

**QUESTION 1**

(a) In your own words, describe the three directions of computer development. [6 marks]

(b) Describe the following technology user types: home user, power user, and enterprise user. [6 marks]

(c) Define the term, server. What services does a server provide? [4 marks]

(d) What is Internet of Things (IoT)? List THREE (3) IoT-enabled devices and technologies. [5 marks]

(e) What is the main function of Random Access Memory (RAM)? List two types of RAM. [4 marks]

**QUESTION 2**

(a) A storage medium is the physical material on which a computer keeps data and information. List FIVE (5) storage media that you know. [5 marks]

(b) Suggest a suitable device or technology for the following cases:

- (i) A small optical scanner for reading characters and sophisticated software to analyze what is being read.
- (ii) A technology that reads hand-drawn marks such as small circles or rectangles.
- (iii) An identification code that consists of a set of vertical lines and spaces of different widths.

[2 + 2 + 2 marks]

(c) List the strengths and weaknesses of Microsoft Windows operating system. [6 marks]

(d) Compute the amount of storage needed (in GB) to store a 1.5-hour video if 20 seconds of video is approximately 5 MB. [4 marks]

(e) List FOUR (4) ways of how a software can be distributed. [4 marks]

**Continued ....**

**Question 3**

(a) Describe the following wireless communications technologies: Bluetooth, Wi-Fi and Cellular Radio. [6 marks]

(b) Discuss the advantages and disadvantages of fiber-optic cables. [6 marks]

(c) You have taken a new job as a network administrator. You have been studying network topologies to setup a network for your team.

(i) There is one device which reliability you are concerned about. What network topology is a bad idea for you?

(ii) You are very confident about the hub you are going to use in your new network. What network topology is a good choice for you? [4 marks]

(d) Define the term, animation. Briefly explain how it can be used in multimedia projects. [5 marks]

(e) Distinguish between lossless and lossy compression techniques. [4 marks]

**QUESTION 4**

(a) Determine whether the following variable names are valid in the C Programming language and state the reason if they are invalid.

(i) Switch  
(ii) ILOVEMMU  
(iii) 18thBirthday  
(iv) \_Entry(1)  
(v) Percentage%  
(vi) WA1234C [6 marks]

(b) Construct a logical expression to represent each of the following conditions:

(i) **age** is in the range 50-70.  
(ii) **answer** is either 'Y' or 'N'  
(iii) **value** is even but not 8. [6 marks]

**Continued ....**

(c) Determine the output of the following program.

[5 marks]

```
#include<stdio.h>

int main()
{
int i;

for (i=3; i<=10; i++) {

    if (i%2 != 0)
        printf("%d is XXX!\n", i);

    else if (i%4 == 0)
        printf("%d is YYY.\n", i);

    else
        printf("%d\n", i*i);
}

return 0;
}
```

(d) Write a complete C program that prompts the user for two integer numbers. The program then compares both numbers and prints out a message with the larger value. If user enters two same integers, the program will print out “both integers have same value”. Sample outputs are as shown in Figure Q4(d).

Please enter two integers:40 10

40 is larger than 10

Please enter two integers:10 35

35 is larger than 10

Please enter two integers:10 10

Both integers have same value

Figure Q4(d): Sample Output (**Bold and underlined** denotes user's input)

[8 marks]

**End of Paper**